

**AIR MONITOR  
CORPORATION**

P.O. Box 6358  
Santa Rosa, CA 95406  
707.544.2706 - P  
707.526.2825 - F

**RECORD PURPOSE SUBMITTAL TRANSMITTAL**

To Sal Ferrera  
Advanced Burner Technologies  
P.O. Box 410  
Pluckemin, NJ 07978

Date December 12, 2003

AMC Work Order 50633  
Purchase Order A03-008-413  
Project Intermountain - IBAMS

cc Mike Stapf, Sr. (mstapf@ix.netcom.com)

Project Manager Andrew Chew  
Sent Via sal@advancedburner.com

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Enclosed find:

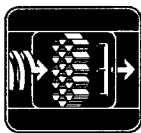
- 1 Record Purpose Submittals, Rev. 0

This order was placed without a requirement for Submittal approval, and has been released for production.

Changes to the order prompted by review of the Record Purpose Submittals must be immediately communicated to Air Monitor's Application Engineering Department (refer to the Project Manager above) in Santa Rosa, California – 707.544.2706.

Possible charges related to order rework and revision of the previously scheduled ship date may be incurred.

**IP7\_030512**



**AIR MONITOR  
CORPORATION**

**WORK ORDER 50633  
PURCHASE ORDER A03-008-413**

**RECORD PURPOSE SUBMITTAL**

**PROJECT** Intermountain - IBAMS

**LOCATION** Delta, UT

**EQUIPMENT** IBAM, VELTRON II in AUTO-purge/SP,  
Burner Performance Testing and CFD Modeling  
\_\_\_\_\_  
\_\_\_\_\_

**REPRESENTATIVE** Stapf Energy Services

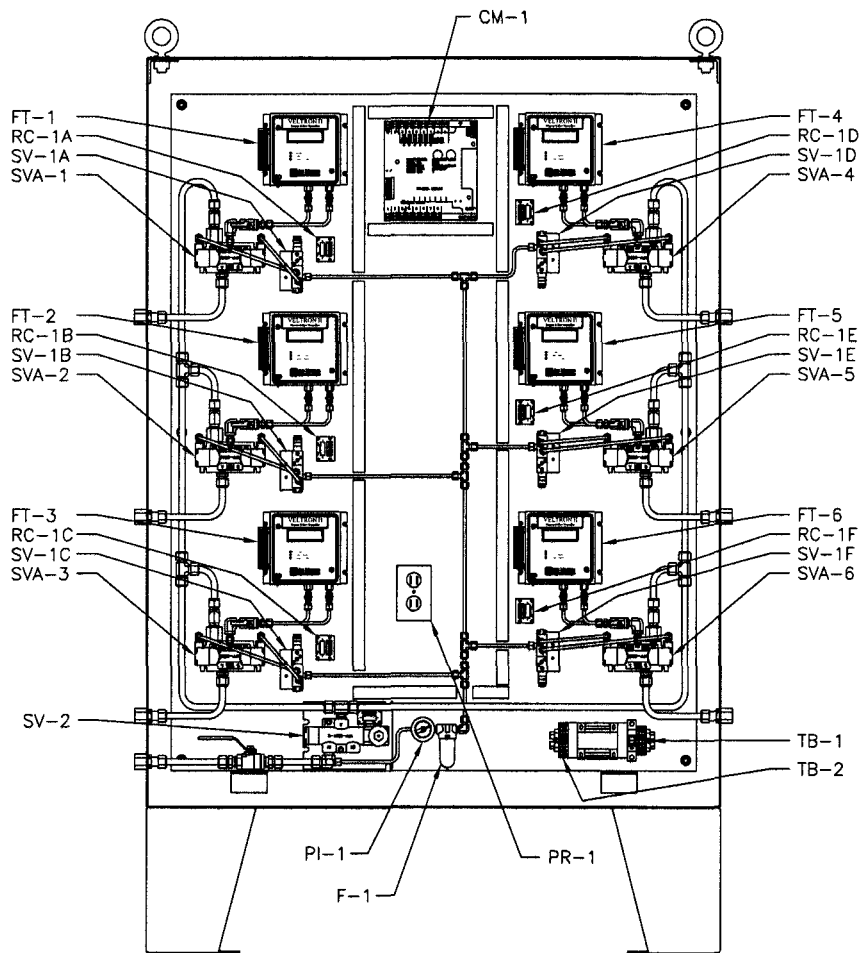
**CONTACT** Mike Stapf, Sr.

**PHONE** 610-783-7166

Date	Rev	Project Manager
12/12/03	0	Andrew Chew



May Reassign P/N  
to our system.



PURGE ENCLOSURE  
(SEE DWG. W50633AA)

## PARTS IDENTIFICATION

CM-1	PLC CONTROL MODULE
F-1	SHUTTLE AIR FILTER
FT-1	FLOW/DP TRANSMITTER
FT-2	FLOW/DP TRANSMITTER
FT-3	FLOW/DP TRANSMITTER
FT-4	FLOW/DP TRANSMITTER
FT-5	FLOW/DP TRANSMITTER
FT-6	FLOW/DP TRANSMITTER
PI-1	MAIN SUPPLY AIR PRESSURE GAUGE
RC-1A	SOLENOID RC FILTER CIRCUIT
RC-1B	SOLENOID RC FILTER CIRCUIT
RC-1C	SOLENOID RC FILTER CIRCUIT
RC-1D	SOLENOID RC FILTER CIRCUIT
RC-1E	SOLENOID RC FILTER CIRCUIT
RC-1F	SOLENOID RC FILTER CIRCUIT
SV-1A	PILOT AIR SOLENOID VALVE
SV-1B	PILOT AIR SOLENOID VALVE
SV-1C	PILOT AIR SOLENOID VALVE
SV-1D	PILOT AIR SOLENOID VALVE
SV-1E	PILOT AIR SOLENOID VALVE
SV-1F	PILOT AIR SOLENOID VALVE
SV-2	MAIN SUPPLY AIR SOLENOID VALVE
SVA-1	SHUTTLE VALVE ASSEMBLY
SVA-2	SHUTTLE VALVE ASSEMBLY
SVA-3	SHUTTLE VALVE ASSEMBLY
SVA-4	SHUTTLE VALVE ASSEMBLY
SVA-5	SHUTTLE VALVE ASSEMBLY
SVA-6	SHUTTLE VALVE ASSEMBLY
T-1	120VAC/24VAC TRANSFORMER
TB-1	120VAC TERMINAL BLOCK
TB-2	24VAC TERMINAL BLOCK
PR-1	POWER RECEPTACLE

## NOTES:

1. TYPICAL FOR 8 ENCLOSURES.

## PROJECT:

INTERMOUNTAIN -- IBAMS  
DELTA, UT  
P.O. #A03-008-413  
AMC W.O. #50633

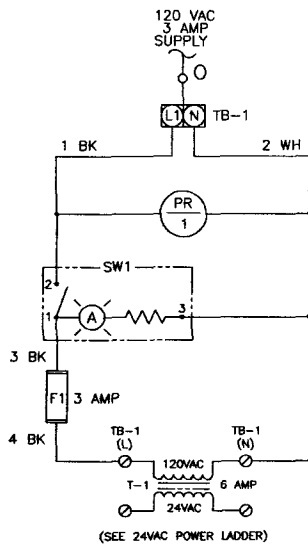


**AIR MONITOR CORPORATION**

P.O. BOX 6358 SANTA ROSA CA 95405  
TELEPHONE (707) 544-2708

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USED FOR REPRODUCTION OR ANY  
OTHER PURPOSE WITHOUT WRITTEN  
PERMISSION FROM AIR MONITOR CORP.

PARTS IDENTIFICATION			
AUTO-purge III/SP w/VELTRON II			
CAD PLOT	12/09/03 15:40:27	FORMAT DWG NO.	REV
		B	W50633AB 0
SCALE FACTOR	10.00	SCALE	1:10.00
		DO NOT SCALE DRAWING	



120VAC POWER LADDER

WIRING NUMBERS/COLORS

1-10	120VAC POWER
11-20	24VAC POWER
21-40	24VDC POWER
41-60	24VDC SIGNALS
61-80	DRY CONTACTS
BLACK	120VAC, LINE
WHITE	120VAC, NEUTRAL
RED	24VAC, LINE
RED/WHITE	24VAC, NEUTRAL
BLUE	24VDC (+)
BLUE/WHITE	24VDC (-)
ORANGE	24VDC SIGNAL (+)
BLUE/WHITE	24VDC SIGNAL (-)
YELLOW	DRY CONTACTS

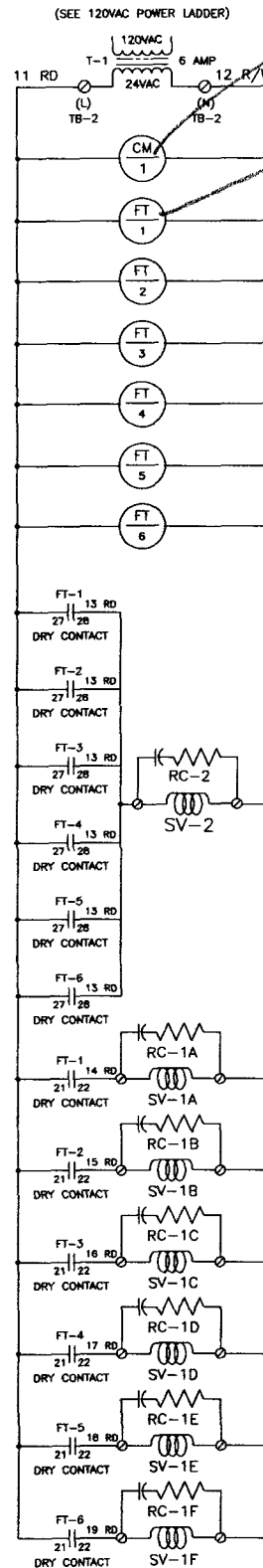
NOTES:  
1. TYPICAL FOR 8 ENCLOSURES.

PROJECT:  
INTERMOUNTAIN - IBAMS  
DELTA, UT  
P.O. #A03-008-413  
AMC W.O. #50633

**AIR MONITOR CORPORATION**  
P.O. BOX 1338 SANTA ROSA, CA 95405  
TELEPHONE (707) 544-2705

POWER LADDER DIAGRAM  
AUTO-purge III/SP w/VELTRON II

DATE PLOT	12/09/03	15:36:59	FORMATTED NO	B	W50633AC	0
SCALE FACTOR	6.00		SCALE	1 6.00		DO NOT SCALE DRAWING

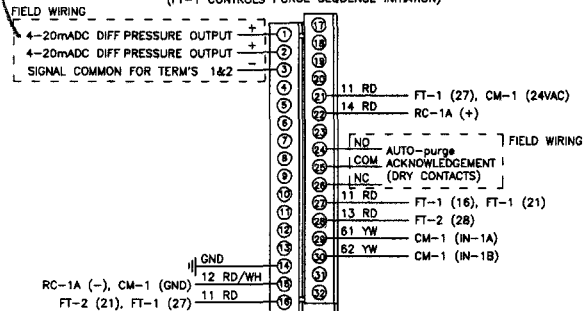


24VAC POWER LADDER

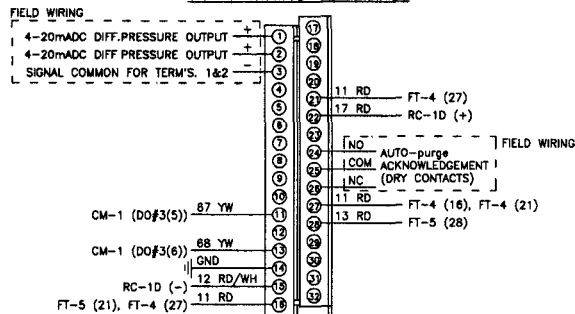
*120VAC Mod.  
Trans.  
Flow*

### FT-1 WIRING TERMINALS

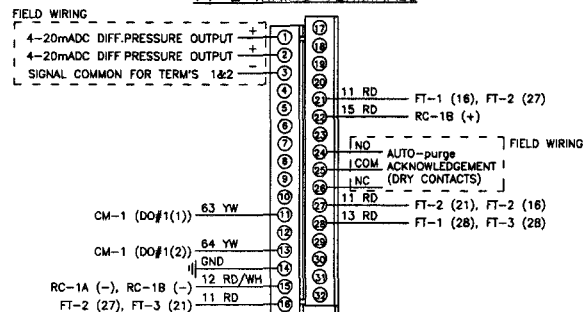
(FT-1 CONTROLS PURGE SEQUENCE INITIATION)



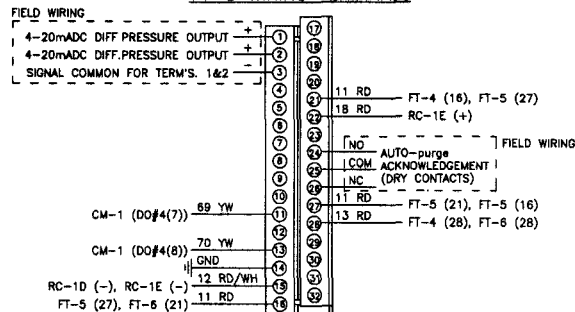
### FT-4 WIRING TERMINALS



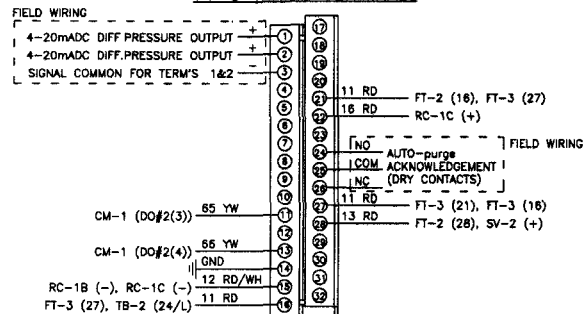
### FT-2 WIRING TERMINALS



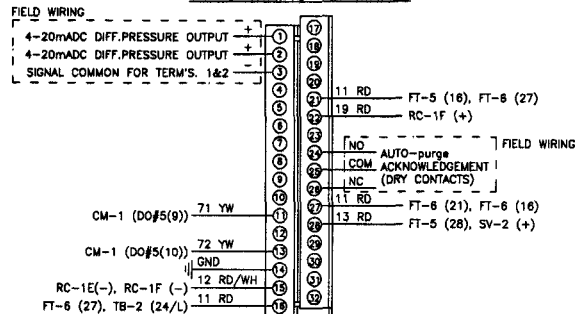
### FT-5 WIRING TERMINALS



### FT-3 WIRING TERMINALS



### FT-6 WIRING TERMINALS




#### NOTES:

1. TYPICAL FOR 8 ENCLOSURES.

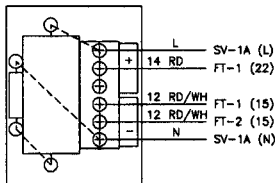
#### PROJECT:

INTERMOUNTAIN - IBAMS  
DELTA, UT  
P.O. #A03-008-413  
AMC W.O. #50633

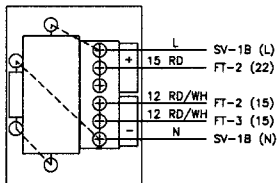
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<b>WIRING DETAILS (1 OF 2)</b> <b>AUTO-purge III/SP w/VELTRON II</b>		
CAD PLOT 12/09/03 15:34:30	FORMAT DWG NO B W50633AD	REV 0
SCALE FACTOR: 2.00	SCALE: 1:2.00	DO NOT SCALE DRAWING

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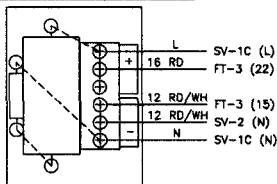
### RC-1A WIRING TERMINALS



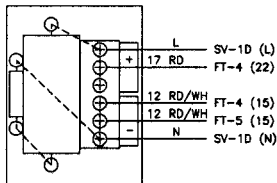
### RC-1B WIRING TERMINALS



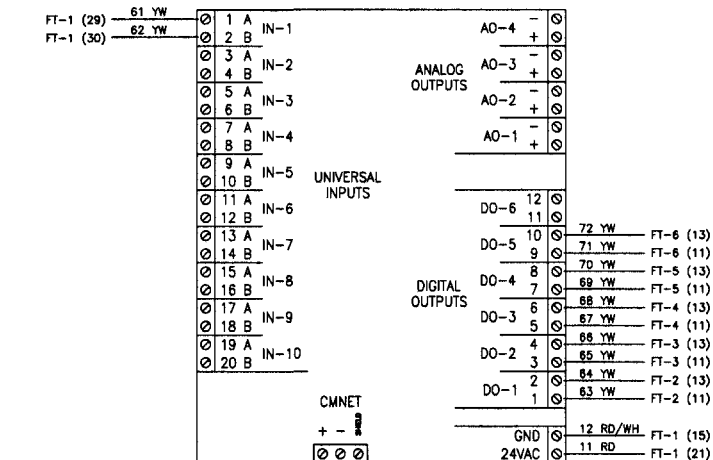
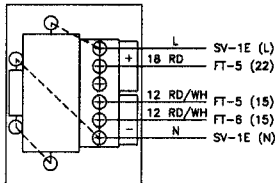
### RC-1C WIRING TERMINALS



### RC-1D WIRING TERMINALS

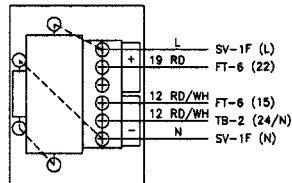


### RC-1E WIRING TERMINALS

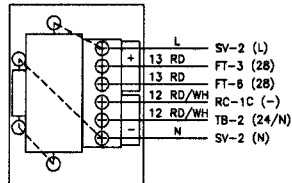


### CM-1 WIRING TERMINALS

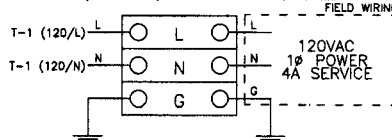
### RC-1F WIRING TERMINALS



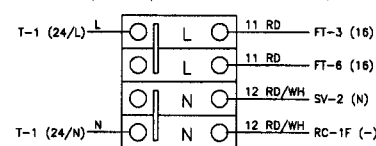
### SV-2 (RC) WIRING TERMINALS



### TB-1 (120VAC) WIRING TERMINALS



### TB-2 (24VAC) WIRING TERMINALS



### NOTES:

1. TYPICAL FOR 8 ENCLOSURES.

### PROJECT:

INTERMOUNTAIN - IBAMS  
DELTA, UT  
P.O. #A03-008-413  
AMC W.O. #50633

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<b>WIRING DETAILS (2 OF 2)</b> <b>AUTO-purge III/SP w/VELTRON II</b>		
CAD PLOT 12/10/03 10:37:47	FORMAT DWG NO. B W50633AE	REV 0
SCALE FACTOR 2.00	SCALE 1:2.00	DO NOT SCALE DRAWING

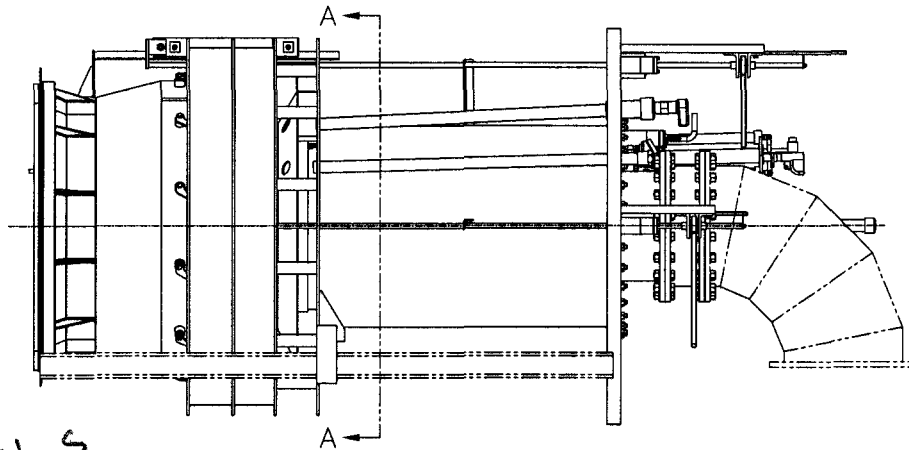




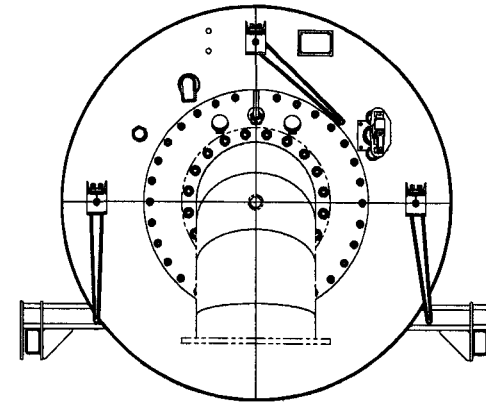
Air flow testing to  
verify these locations.

Guarantee 3% flow of Air Monitor and  
insert air flow device.  
No Density & Temp corrections.

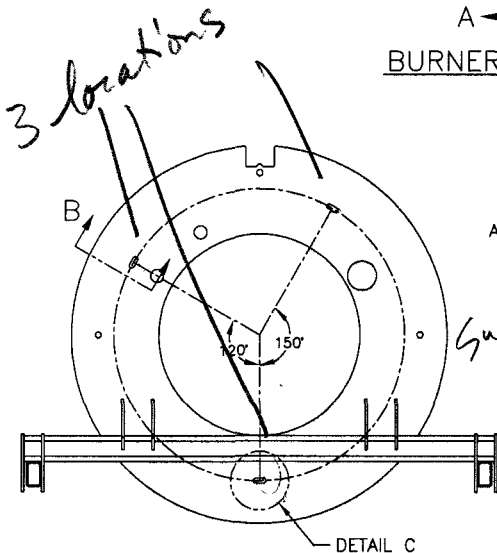
REV	DESCRIPTION	DATE	DWN	APV
1	ADDED SLOT DETAIL	12/8/03	SEL	AEC



BURNER SIDE VIEW



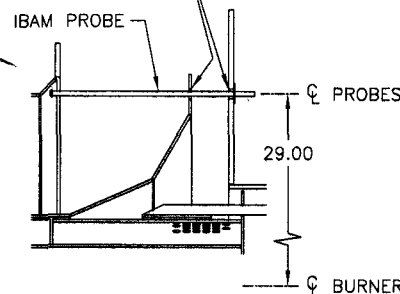
BURNER END VIEW  
CCW SHOWN, CW IS OPPOSITE HAND



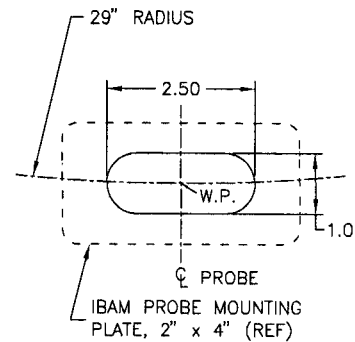
SECTION A-A  
CCW SHOWN, CW IS OPPOSITE HAND

SLOT REQUIRED THRU  
BURNER END WALL AND  
AIR FLOW DIVIDER ASS'Y.

Support



SECTION B-B  
PARTIAL SECTION @ PROBE LOCATION



DETAIL C  
PROBE MOUNTING SLOT  
TYPICAL 3 LOCATIONS

NOTES:  
1. TYPICAL OF 48 BURNERS

PROJECT:  
INTERMOUNTAIN - IBAMS  
DELTA, UT  
P.O. #A03-008-413  
AMC W.O. #50633

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IBAM PROBES  
INSTALLATION

CAD PLOT 12/12/03 09:49 13	FORMAT DWG NO. B W50633BB	REV 1
SCALE FACTOR 24.00	SCALE 1:24.00	DO NOT SCALE DRAWING

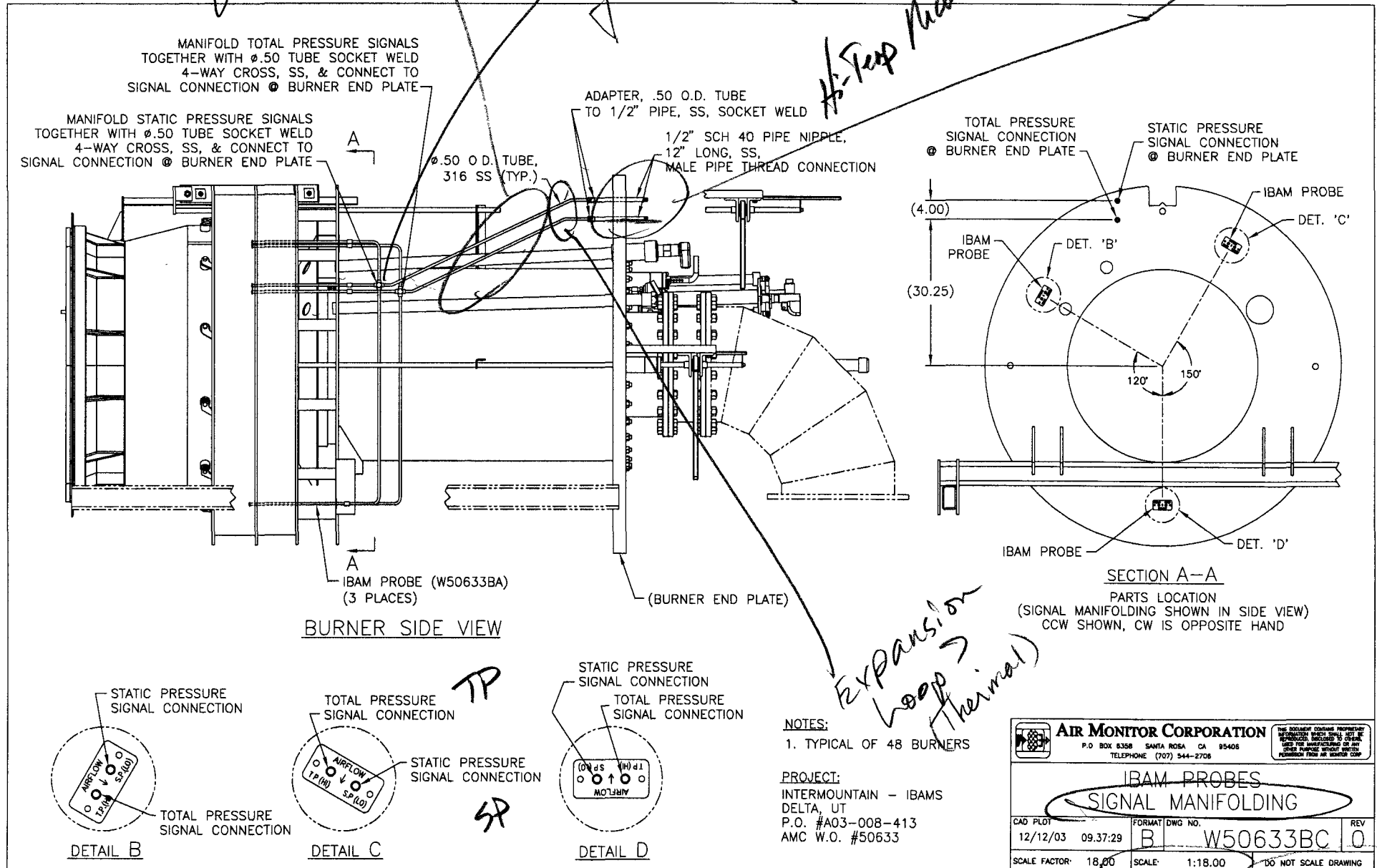
Perforated plate testing?

IP7\_030520

*manifolding  
of 3 probes  
TP & SP's  
Bracing  
Required.  
Avoid  
quaking*

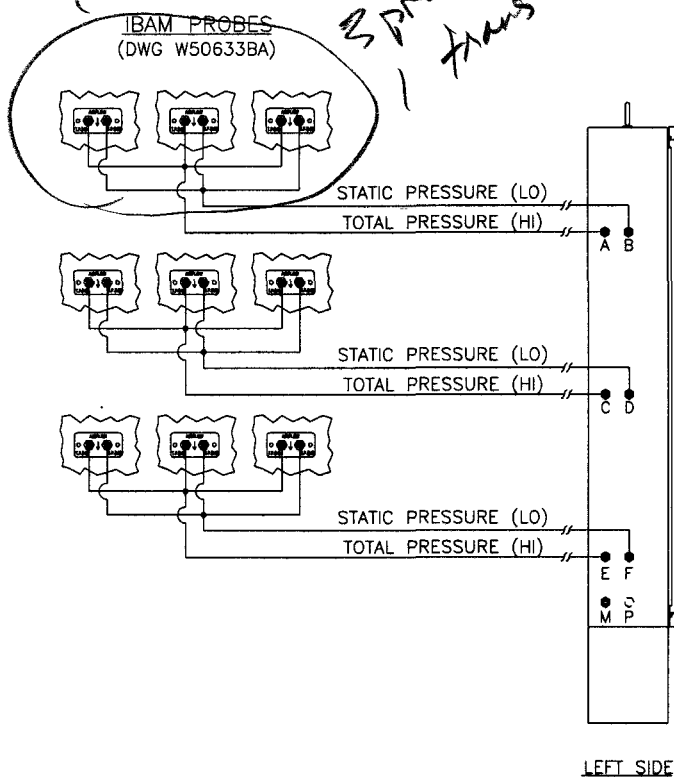
*Welding  
or  
Hi-Temp  
Nickel Anti-Siege*

*6" To clear  
the insulation.*



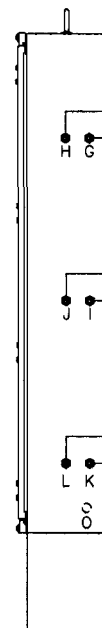
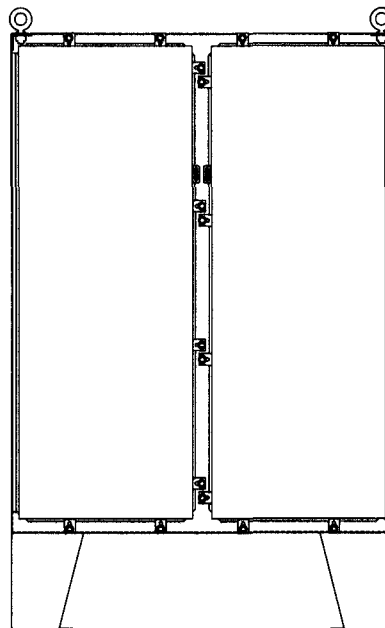
IP7\_030521

*in Burner.*  
*3 probes to fans.*



LEFT SIDE

VELTRON II & AUTO-purge III/SP  
 (DWG W50633AA)



RIGHT SIDE

LEGEND:

— SIGNAL TUBING (BY OTHERS)

NOTES:

1. TYPICAL OF 8 INSTALLATIONS.

PROJECT:

INTERMOUNTAIN - IBAMS  
 DELTA, UT  
 P.O. #A03-008-413  
 AMC W.O #50633

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<b>SYSTEM TUBING          DIAGRAM</b>		
CAD PLOT 12/12/03 09:17:21	FORMAT DWG NO B W50633CA	REV 0
SCALE FACTOR: 15.00	SCALE: 1:15.00	DO NOT SCALE DRAWING

IP7\_030522

## ABT INTERMOUNTAIN IBAM TESTING

Air Monitor Work Order Number: 50633

Maximum secondary airflow per burner is 161,000 LB/HR (88,297 acfm, 35,716 scfm)

Average operating air temperature: 645° F

Normal operating static pressure of the burner is 3 in. w.c.

*Double check values.  
why these values?*

The outer volume damper will be tested at 4.8", 10.4" and 16" open.

The inner volume damper positions will be tested at 1" and 5" open.

The swirl vane positions will be tested at 30°, 45° and 60°.

Testing at three fan settings (flow rates) 5, 7 & 10VDC will be performed. Fan capacity @10VDC = 36000 acfm.

*vs 161,000*

### WIND TUNNEL TEST MATRIX

Test #	Outer Damper Position	Inner Damper Position	Swirl Vane Position	VFD Setting
1	4.8"	1"	30°	5 VDC
2	4.8"	1"	30°	7 VDC
3	4.8"	1"	30°	10 VDC
4	10.4"	1"	30°	10 VDC
5	10.4"	1"	30°	7 VDC
6	10.4"	1"	30°	5 VDC
7	16"	1"	30°	5 VDC
8	16"	1"	30°	7 VDC
9	16"	1"	30°	10 VDC
10	16"	5"	30°	10 VDC
11	16"	5"	30°	7 VDC
12	16"	5"	30°	5 VDC
13	10.4"	5"	30°	5 VDC
14	10.4"	5"	30°	7 VDC
15	10.4"	5"	30°	10 VDC
16	4.8"	5"	30°	10 VDC
17	4.8"	5"	30°	7 VDC
18	4.8"	5"	30°	5 VDC
19	4.8"	5"	45°	5 VDC
20	4.8"	5"	45°	7 VDC
21	4.8"	5"	45°	10 VDC
22	10.4"	5"	45°	10 VDC
23	10.4"	5"	45°	7 VDC
24	10.4"	5"	45°	5 VDC
25	16"	5"	45°	5 VDC
26	16"	5"	45°	7 VDC
27	16"	5"	45°	10 VDC
28	16"	1"	45°	10 VDC
29	16"	1"	45°	7 VDC
30	16"	1"	45°	5 VDC
31	10.4"	1"	45°	5 VDC
32	10.4"	1"	45°	7 VDC
33	10.4"	1"	45°	10 VDC
34	4.8"	1"	45°	10 VDC
35	4.8"	1"	45°	7 VDC
36	4.8"	1"	45°	5 VDC
37	4.8"	1"	60°	5 VDC
38	4.8"	1"	60°	7 VDC
39	4.8"	1"	60°	10 VDC
40	10.4"	1"	60°	10 VDC
41	10.4"	1"	60°	7 VDC
42	10.4"	1"	60°	5 VDC
43	16"	1"	60°	5 VDC
44	16"	1"	60°	7 VDC
45	16"	1"	60°	10 VDC
46	16"	5"	60°	10 VDC
47	16"	5"	60°	7 VDC
48	16"	5"	60°	5 VDC
49	10.4"	5"	60°	5 VDC
50	10.4"	5"	60°	7 VDC
51	10.4"	5"	60°	10 VDC
52	4.8"	5"	60°	10 VDC
53	4.8"	5"	60°	7 VDC
54	4.8"	5"	60°	5 VDC

## ABT INTERMOUNTAIN IBAM TESTING

Air Monitor Work Order Number: 50633

The outer volume damper will be tested at 4.8" and 16" open.

The inner volume damper positions will be tested at 1" & 5" open.

The swirl vane position backpressure will be simulated for a single 45° position.

Testing at three flow rates: 160,000 lb/hr, 110,000 lb/hr & 70,000 lb/hr.

*Actual temp at testing?*  
*Correct?*

### CFD MODELING TEST MATRIX

Test #	Outer Damper Position	Inner Damper Position	Flow Rate	Temp. °F	Pressure In. W.C.	Barometer In. Hg
1	4.8"	1"	110,000 lbs/hr	85°	3"	29.921"
2	16"	1"	110,000 lbs/hr	85°	3"	29.921"
3	16"	1"	70,000 lbs/hr	645°	3"	25.105"
4	4.8"	1"	70,000 lbs/hr	645°	3"	25.105"
5	4.8"	1"	161,000 lbs/hr	645°	3"	25.105"
6	16"	1"	161,000 lbs/hr	645°	3"	25.105"
7	16"	5"	161,000 lbs/hr	645°	3"	25.105"
8	4.8"	5"	161,000 lbs/hr	645°	3"	25.105"
9	4.8"	5"	70,000 lbs/hr	645°	3"	25.105"
10	16"	5"	70,000 lbs/hr	645°	3"	25.105"
11	16"	5"	110,000 lbs/hr	85°	3"	29.921"
12	4.8"	5"	110,000 lbs/hr	85°	3"	29.921"

# AUTO-purge III INSTALLATION GUIDE

## Air Requirement.

80 to 125 psig at 100 CFM, oil and dirt free. 1 to 24 purge cycles per day, with a field selectable duration between 30 and 120 seconds during which compressed air is released.

## Line Size from AUTO-purge Panel to Flow Measuring Station or Probes.

Distance from AUTO-purge panel  
to flow measuring station air probe.

Tube Size.

< 25'	1/2" S.S. tube
25' - 50'	3/4" S.S. tube
> 50'	1.0" S.S. tube

*Tube sizes in mindbox  
and for distant burners.  
Consistent are specific?  
1/2" vs. 1.0"*

## Accumulator Tank (strongly recommended).

Requires coalescing filter, pressure regulator, and check valve at the tank inlet.

- 120 gallons - All CA stations.
- 120 gallons - Multiple VOLU-probes having a combined length greater than 10'.
- 80 gallons - One or more VOLU-probes having a combined length less than 10'.

## Line from Accumulator Tank to AUTO-purge Panel.

25' maximum length, 1/2" pipe (minimum). Recommend locating accumulator tank as close as possible to AUTO-purge panel.

## Electrical Power Requirement.

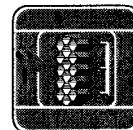
None when used with an Air Monitor transmitter. (NOTE: This adds 36VA to the transmitter's power requirement.)  
24VAC, 36VA when not initiated by an Air Monitor transmitter.  
120VAC, 10 amp when an optional enclosure heater is installed.

## Ambient Temperature.

40°F-140°F. For ranges above or below this ambient temperature, use of panel heater and/or cooler is required.

## Purge Frequency.

Once/day minimum, once/hour maximum.



## VELTRON II

### ULTRA-LOW RANGE DIFFERENTIAL PRESSURE/ FLOW TRANSMITTER

*Boxes should be checked.*

**OPTIONS** ☐ Alarms or ☐ AUTO-purge Management  
☐ Auxiliary Output  
☐ Terminal Cover/Conduit Connection

**Special Function**  
☐ % Deviation  
☐ Summed Flow  
☐ Averaged Flow  
☐ Differential Flow  
☐ Low Select  
☐ High Select

**Power**  
☐ 24VAC  
☐ 20-40VDC  
☐ 120VAC (via external transformer)

**Certification**  
☐ Standard  
☐ NIST Traceable  
**Display**  
☐ 2x20 LCD (Std)  
☐ 4x20 LCD

#### PERFORMANCE SPECIFICATIONS

**Accuracy.**  
 $\pm 0.1\%$  of Natural Span, including non-linearity, hysteresis, deadband, and non-repeatability.

**Stability.**  
 $\pm 0.5\%$  of Natural Span for one year.

**Temperature Effect.**  
 Zero. None; corrected by AUTO-zero.  
 Span.  $0.015\%$  of Full Span/ $^{\circ}\text{F}$ .

**Mounting Position Effect.**  
 None; corrected by AUTO-zero.

**Transducer Response Time.**  
 0.5 seconds to reach 98% of a step change.

**Power Consumption.**  
 Standard: 18VA at 24VAC; 13VA at 24VDC; 36VA at 120VAC.  
 With AUTO-purge Management: 54VA at 24VAC; 48VA at 24VDC; 108VA at 120VAC

#### FUNCTIONAL SPECIFICATIONS

**Digital Outputs.**  
 Dual form C dry contacts rated for 3 Amps at 24VAC/VDC for optional Hi/Lo alarm. Dual Form A dry contacts rated for 3 amps at 24VAC/VDC for AUTO-purge activation and acknowledgment.

**Digital Inputs.**  
 Dry contact for AUTO-purge external start command.

**Analog Outputs.**  
 Dual transmitter outputs are individually configurable via jumper for 0-5VDC, 0-10VDC, or 4-20mADC. Two additional outputs are optionally available.

**Analog Inputs.**  
 A single input is field configurable via jumper for 0-5VDC, 0-10VDC, or 4-20mADC. For use with optional special function.

**AUTO-purge Management.**  
 AUTO-purge cycle is initiated via an external dry contact input, or via an internal timer with field selectable frequencies of 1 to 24 hours, in 1 hour increments. An SPDT dry contact controls the AUTO-purge System; a second dry contact provides remote purge activation acknowledgment.

**Power Supply.**  
 Standard 24VAC (20-28VAC) or 24VDC (20-40VDC), with automatic selection. Optional 120VAC (100-132VAC), via external transformer.

**Low Pass Filtration.**  
 Response time to reach 98% of a step change is adjustable from 2.0 to 250.0 seconds.

**Automatic Zeroing.**  
 Accuracy. Within 0.1% of calibrated span.  
 Frequency. Every 1 to 24 hours on 1 hour intervals.

**Overpressure and Static Pressure Limit.**  
 25 psig.

**Circuit Protection.**  
 Power input is isolated, fused and reverse polarity protected.

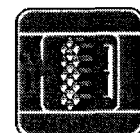
**Span and Zero Adjustment.**  
 Digital, via internally located push-buttons.

**Displays.**  
 Standard 2 line x 20 character LCD provides one line of data display. Optional 4 line x 20 character LCD provides up to 4 lines of data display.

LED's indicate CPU activated, AUTO-zero in progress, AUTO-zero over-ranged, AUTO-purge in progress, and auxiliary alarm "on" status.

**Humidity Limits.**  
 0-95% RH, non-condensing.

**Temperature Limits.**  
 $-20^{\circ}\text{F}$  to  $180^{\circ}\text{F}$  Storage.  
 $+40^{\circ}\text{F}$  to  $140^{\circ}\text{F}$  Operating.



## VELTRON II ULTRA-LOW RANGE DIFFERENTIAL PRESSURE/ FLOW TRANSMITTER

### PHYSICAL SPECIFICATIONS

#### Signal Connections.

High and low pressure, 1/8" FPT.

#### Enclosure.

NEMA 1 aluminum enclosure.

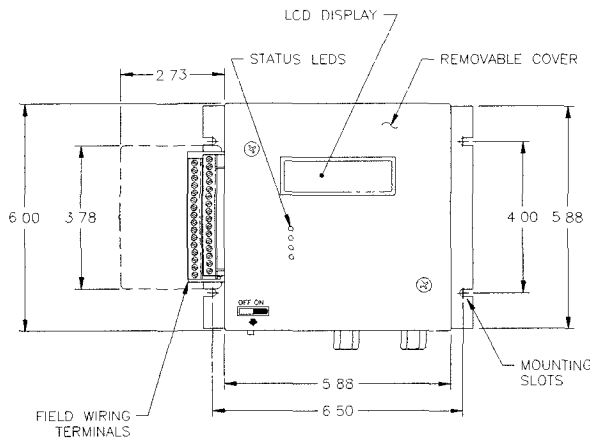
#### Electrical Connections.

External terminal strip with plug-in connectors. Optional terminal strip enclosure with dual 3/4" conduit connections.

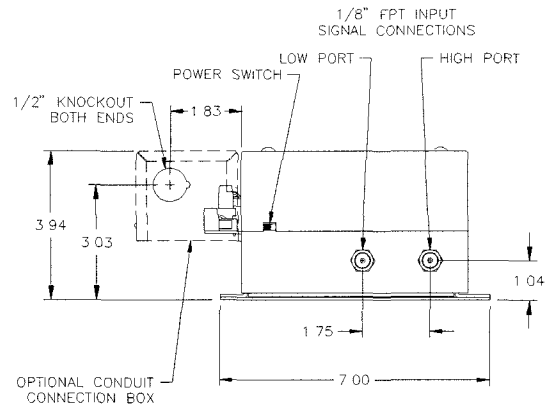
#### Weight.

4.1 lbs.

### DIMENSIONAL SPECIFICATIONS

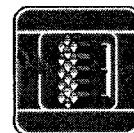
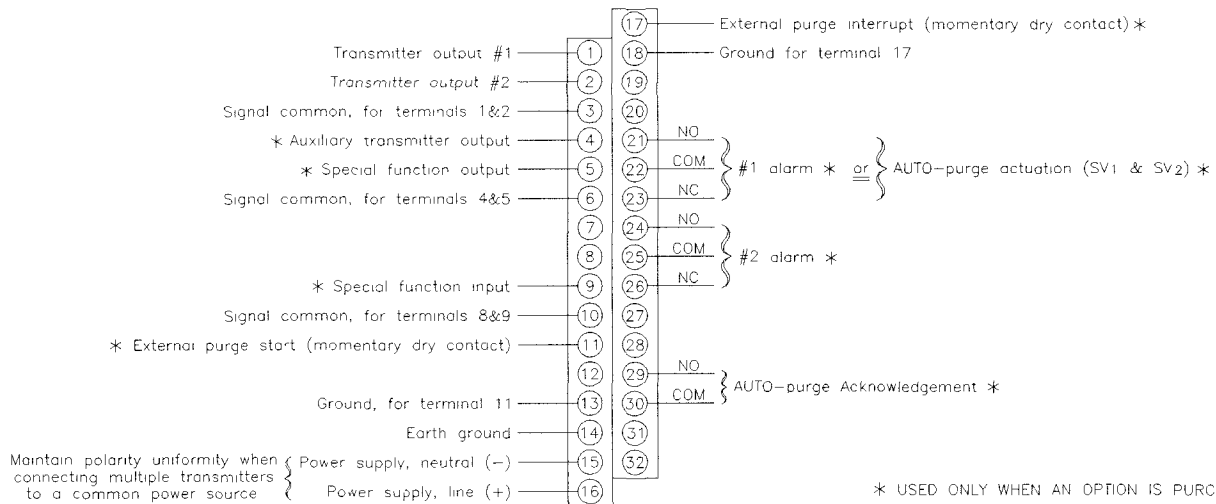


FRONT VIEW



BOTTOM VIEW

### WIRING DIAGRAM







**AIR MONITOR  
CORPORATION**

# TRANSMITTER SPAN/MASS FLOW CALCULATIONS

PROJECT: **ABT/INTERMOUNTAIN POWER BURNER**  
 WORK ORDER: **50633** REV: **0**  
 TAG(S): **PRELIMINARY SPAN DATA CALCULATION ONLY**

## Given Information:

Fluid:  
 Standard Temperature ( $T_{std}$ ):  
 Standard Barometric Pressure ( $P_{std}$ ):  
 Air Temperature (T):  
 Stack/Duct Pressure ( $P_g$ ):  
 Actual Barometric Pressure ( $P_{bar}$ ):  
 Air Density at Standard Conditions, DRY:  
 Duct Shape:  
 Duct Diameter:

<b>AIR</b>	
<b>68</b>	(deg. F)
<b>29.921</b>	(in. Hg)
<b>645</b>	(deg. F)
<b>3.00</b>	(in. w.c.)
<b>25.105</b>	(in. Hg)
<b>0.07513</b>	(lbs/ft <sup>3</sup> )
<b>CIRC</b>	
<b>62.805</b>	(in.)

% H<sub>2</sub>O (by volume):  
**0.00** (% by volume)

Maximum Flow:  
**161,000** (lb/hr)  
**Wet** (Wet/Dry)

Square Root Extraction? (Yes/No)  
**No**

Output:  
**4-20 mADC**

## Calculations:

Duct Area ( $A_g$ ): 21.514 (ft<sup>2</sup>)  
 Maximum Actual Velocity: 4,104 (AFPM)  
 Absolute Duct Pressure ( $P_g$ ): 25.326 (in. Hg)  
 Dry Mole Fraction of Duct ( $M_{fd}$ ): 1.000  
 Dry Molecular Wt. Of Air ( $M_d$ ): 28.965 (lb/lb-mole)  
 Wet Molecular Wt. Of Air ( $M_s$ ): 28.965 (lb/lb-mole)  
 Air Density at Standard Conditions, WET: 0.07513 (lbs/ft<sup>3</sup>)  
 Air Density at Actual Conditions, WET: 0.03039 (lbs/ft<sup>3</sup>)

*Static vs. Total*

% DP (%)	Diff. Press. (in. w.c.)	Output (mADC)	Actual Flow (ACFM)	Std.Flow/Dry (SCFM)	Std.Flow/Wet (SCFM)	MassFlow/Dry (Lbs/Hr)	MassFlow/Wet (Lbs/Hr)
0	0.0000	4.00	0	0	0	0	0
10	0.0425	5.60	27,922	11,294	11,294	50,913	50,913
20	0.0850	7.20	39,487	15,973	15,973	72,001	72,001
30	0.1275	8.80	48,362	19,562	19,562	88,183	88,183
40	0.1700	10.40	55,844	22,589	22,589	101,825	101,825
50	0.2125	12.00	62,435	25,255	25,255	113,844	113,844
60	0.2550	13.60	68,394	27,665	27,665	124,710	124,710
70	0.2975	15.20	73,874	29,882	29,882	134,702	134,702
80	0.3400	16.80	78,975	31,945	31,945	144,003	144,003
90	0.3825	18.40	83,765	33,883	33,883	152,738	152,738
100	0.4250	20.00	88,297	35,716	35,716	161,000	161,000

Transmitter: **VELTRON II** Power (voltage/type): **24VAC**  
 Flow Element: **IBAM** Power Configuration: **4-Wire**  
 Transmitter Maximum Range: **0.00 - 1.00 IN w.c.** Square Root: **OFF**

*1" Transmitter*

Display Line #1: **0.00 - 1.00 IN w.c.** (DIFFERENTIAL PRESSURE)  
 Display Line #2: (N/A)  
 Display Line #3: (N/A)  
 Display Line #4: (N/A)

## CONTROL MODULE

### FEATURES

- Separate, quick change, plug-in terminal strip for input and output wiring.
- On/Off power switch on the module.
- Individual On/Off/Auto switches for relay outputs.
- Field configurable inputs for 0-5VDC, 4-20mADC, or dry contacts.
- Factory configured, programmed, and tested. Reprogrammable in the field or by remote phone access (requires Communications Module and modem).

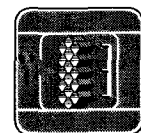
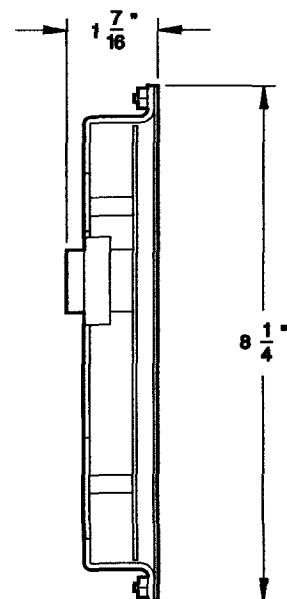
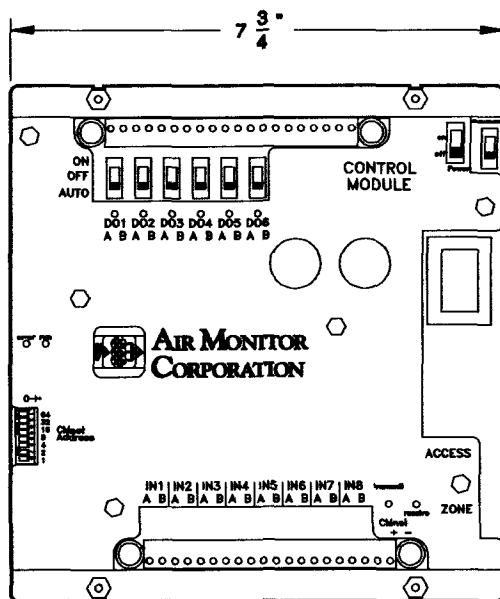
### PERFORMANCE SPECIFICATIONS

<b>Input.</b>	0.1% Resolution.	<b>Scan Time.</b>	0.25 second scan cycle time for all inputs and outputs
<b>Output.</b>	0.4% Resolution.	<b>Microprocessor.</b>	Motorola MC68HC11.

### FUNCTIONAL SPECIFICATIONS

<b>Outputs.</b>	Three analog 0-10VDC. Six SPDT relay outputs (Form A), 3 amps maximum @ 24VAC/VDC.
<b>Inputs.</b>	Eight universal inputs (0-5VDC, 4-20mADC, or dry contact).
<b>Communications.</b>	RS485 port programmable for 9600 to 38.4 kbps.
<b>Memory.</b>	Non-volatile read/write.
<b>Power Supply.</b>	24VAC, 50-60 Hz. 20VA maximum. Lithium battery provides 10,000 hours of data storage during power outages.
<b>Circuit Protection.</b>	Surge protection on input power. Optical isolation on RS485 communication line. Arc suppression on relay outputs.
<b>Indication.</b>	LED indicators for status of outputs, power, and communication.
<b>Temperature Limit.</b>	-20°F to 180°F storage. 40°F to 150°F operating.

### DIMENSIONAL SPECIFICATIONS



## WARRANTY

### PROCESS / POWER

#### PRODUCTS COVERED

FAN-E/SS  
LO-flo/SS  
SAP

VOLU-probe/SS  
VOLU-probe/SM  
SOAP

VOLU-probe/VS-SS  
VOLU-probe/FI-SS  
STAT-probe/1SS

CA Stations  
IBAMS  
STACK-probe

#### WARRANTY

Air Monitor Corporation (hereinafter referred to as "Seller") warrants that at the time of shipment, products sold pursuant to this contract will be free from defects in materials and workmanship, and will conform to the specifications furnished or approved in writing by Seller. No warranty is given that delivered products will conform to catalog sheets, data sheets, and the like, which are subject to change without notice.

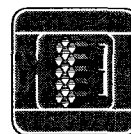
Seller will repair or replace, at its option, any products listed under this warranty which is returned freight pre-paid to Seller within the earlier of one (1) year after start-up or fifteen (15) months after shipment that, upon test and examination, proves defective within the terms of this warranty. The warranty period for any item repaired or replaced shall be for the time remaining on the warranty period of the original components. Purchaser shall notify Seller in writing of such defect within sixty (60) days of discovery of the defect.

This warranty does not extend to any product sold by Seller which has been the subject of misuse, neglect, accident, damage or malfunction caused by interconnection with equipment manufactured by others, improper installation or storage, or used in violation of instructions furnished by Seller, nor does it extend to any product which has been repaired or altered by persons not expressly approved by Seller. Nor does Seller warrant equipment against normal deterioration due to environment; nor items such as thermocouples, electrodes, and similar items subject to wear or burnout through usage. Adjustments for items or equipment not manufactured by Seller shall be made to the extent of any warranty of the manufacturer or supplier thereof.

Seller shall not be liable for any special or consequential damages or for loss of damage, directly or indirectly arising from the use of the products. Seller's warranty shall be limited to replacement of defective equipment and shall not include field removal and installation expenses.

The warranty set forth above is in lieu of all other warranties either express or implied and constitutes the full extent of Air Monitor Corporation's liability to the customer, or any other party for breach of warranty. THERE ARE NO EXPRESS WARRANTIES EXCEPT AS SET FORTH HEREIN. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, WHICH ARE PARTICULARLY DISCLAIMED.

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CORPORATION

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## WARRANTY

### PROCESS / POWER

#### PRODUCTS COVERED

**VELTRON II**  
**VEL-trol II**  
**MASS-tron II**

**VELTRON DPT**  
**VELTRON DPT-*plus***

**MASS-tron II/CEM**  
**CAMM**

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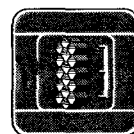
Seller will repair or replace, at its option, any products listed under this warranty which is returned freight pre-paid to Seller within the earlier of three (3) years after start-up or thirty-nine (39) months after shipment that, upon test and examination, proves defective within the terms of this warranty. The warranty period for any item repaired or replaced shall be for the time remaining on the warranty period of the original components. Purchaser shall notify Seller in writing of such defect within sixty (60) days of discovery of the defect.

This warranty does not extend to any product sold by Seller which has been the subject of misuse, neglect, accident, damage or malfunction caused by interconnection with equipment manufactured by others, improper installation or storage, or used in violation of instructions furnished by Seller, nor does it extend to any product which has been repaired or altered by persons not expressly approved by Seller. Nor does Seller warrant equipment against normal deterioration due to environment; nor items such as thermocouples, electrodes, and similar items subject to wear or burnout through usage. Adjustments for items or equipment not manufactured by Seller shall be made to the extent of any warranty of the manufacturer or supplier thereof.

Seller shall not be liable for any special or consequential damages or for loss of damage, directly or indirectly arising from the use of the products. Seller's warranty shall be limited to replacement of defective equipment and shall not include field removal and installation expenses.

The warranty set forth above is in lieu of all other warranties either express or implied and constitutes the full extent of Air Monitor Corporation's liability to the customer, or any other party for breach of warranty. THERE ARE NO EXPRESS WARRANTIES EXCEPT AS SET FORTH HEREIN. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, WHICH ARE PARTICULARLY DISCLAIMED.

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